

A COST ANALYSIS OF RECAPTURING SELECTED CHAMPUS WORKLOAD AT FITZSIMONS ARMY MEDICAL CENTER

A Graduate Research Project Submitted to the Faculty of Baylor University in Partial Fulfillment of the Requirements for the Degree of Master of Health Care Administration

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I. INTRODUCTION

A. A HISTORICAL PERSPECTIVE

Medical services under the auspices of the federal government came into existence at different periods in the history of this country. As might be expected in any developing nation, none of these services were part of an integrated planned program but rather, evolved as a reaction to a perceived need. The only relevant issues were underlying ones, such as national defense or sustainment of commerce.

Generally, the first Federal provision for direct medical care is considered to be the act passed by Congress on July 18, 1798. The legislation, entitled "Act for the Relief of Sick and Disabled Seamen," provided care for merchant seamen in special marine hospitals. The organization created by the Act is considered to be the origin of the Public Health Service which now provides direct medical services through hospitals. out-patient clinics and contract health care providers. In 1799, the Act was expanded to include governmental naval service, with members of the U.S. Navy accorded the same benefits as were the crews of merchant vessels.²

Although physicians and surgeons had served with the Revolutionary Army.

a formal system had not evolved within the military for medical care until

1818. At that time, the Army Medical Department was founded.³ Since then, both fixed and field hospitals, in conjunction with a system of dispensaries (health clinics in more modern terminology), have served U.S. troops around the world. In 1884, the system was expanded such that military dependents were now authorized free care in these facilities.⁴ In retrospect, the "Act for the Relief of Sick and Disabled Seamen" was authorized to improve a serviceman's inadequate pay by providing free medical care that was unavailable at many remote military posts. The language of this act was quite vague and came to be considered as authorization for care of both dependents and retirees on a space available basis.

Another group that was designated as beneficiaries of free government-sponsored health care were the American Indians. This responsibility was originally given to the U.S. Army program. It was later transferred from the U.S. Army Medical Department to the Bureau of Indian Affairs, and then to the Public Health Service under the Department of Health and Human Services. Once again, there was no formally organized plan to provide health care, just a general mandate stating that the American Indian was a "ward of the state," and entitled to health care from available governmental sources as a humanitarian service.

A little known, but active, federal health care system was developed in 1865 when Congress created the Freedman's Bureau for the relief of unemployed.

ill, and infirm blacks. Although no specific provisions were made for direct health care in the Bureau's charter, by 1867 it was operating 46 hospitals with 5,292 beds. Due to a lack of political support, the bureau and its medical systems gradually ceased to exist. All that has remained today is the Freedman Hospital in Washington, D.C.⁶

The U.S. Government gradually assumed responsibility for providing health care to war veterans. Originally the care was of a domiciliary type and was provided in soldiers' and sailors' homes under the auspices of the War Department. After World War I, a number of legislative acts by Congress gradually increased medical benefits. In 1921, several fragmented programs were consolidated under the auspices of the newly formed Veterans Bureau. As veterans' programs grew, by 1939, the Veterans Bureau evolved into what is now known as the Veterans Administration. The growth of medical care for the veteran has been incremental. Expansion of services to the veteran usually occurred near the end or immediately after a war when favorable public sentiment for veterans was high.

In addition, the U.S. Government has provided direct medical care to other smaller population groups. Among these were leprosariums for the treatment of lepers, hospitals and dispensaries for federal prisoners. facilities for the treatment of drug addicts, and mental hospitals such as St. Elizabeth's in Washington, D.C. The majority of these, which were started as

a specific reaction for a specific need, are run by the Public Health Service of the Department of Health and Human Services.

By 1949 the federal government was providing direct health care services for an estimated 30 million Americans. The first Hoover Commission of 1949 was created to study and investigate the organization and methods of operation of all elements of the Executive Branch of Government. The first commission concentrated on efforts to promote greater efficiency and to effect greater economy. The second Hoover Commission was charged by Congress "to promote economy, efficiency, and improved service in the transaction of public business" in all executive agencies. In studying the federal health care system at that time, commission investigators found that of the \$4 million spent on direct health care, 66 percent went to the Veterans Administration and 25 percent went to the Department of Defense. In 1949, their conclusion was:

"The enormous and expanding federal medical activities are devoid of any central plan. Four large, and many smaller, government agencies obtain funds and build hospitals with little knowledge of, and no regard for, the needs of others. They compete with each other for scarce personnel. No one has responsibility for an overall plan. There is not even a clear definition of the classes of beneficiaries for whom care is to be planned. The government is moving into uncalculated obligations without an understanding of their ultimate costs, of the lack of professional manpower available to discharge them, or of the adverse effect on the hospital system of the country."

The Hoover Commission of 1955 basically echoed the same thoughts. As a result of these findings the commission recommended the establishment of a cabinet level United Medical Administration to combine all health care functions being administered by the government. It was now recognized that the U.S. Government was opening an extremely large direct health care system without a congruent plan. Unfortunately, few of the Hoover Commission recommendations were implemented and, for better or for worse, it had little effect on the federal health care system. However, since it is still quoted, it provides a structure to study the role of the federal government in providing direct medical services.

The Grace Commission

The PPSSCC, which stands for the President's Private Sector Survey on Cost Control, commonly known as the Grace Commission, was a follow-up to the Hoover Commissions of three decades earlier. One of the Grace Commission's contentions was that the government was currently spending billions on functions and services that could better be handled in the private sector at less cost. Some of the recommendations affecting the federal delivery of health care were:

- (1) Veterans Administration hospitals should be constructed and managed by private firms.
- (2) The Veterans Administration should convert its excess

hospital capacity to long-term care facilities, substitute less costly out-patient care where appropriate and transfer to nursing homes those patients who no longer needed acute care.

- (3) The Veterans Administration and Indian Health Services should use fiscal intermediaries to process insurance claims to cut the cost of processing, uncover duplication and coordinate benefits.
- (4) The Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) should find out if patients have private health insurance coverage and collect from those third party payers when tiere is duplicate coverage.
- (5) A defense health agency should be created to coordinate management of direct health care and the CHAMPUS program.

The final report of the Grace Commission did not arrive at the White House in time for the 2,478 recommendations to be incorporated into the fiscal 1985 budget request. Current Budget requests from the President have incorporated a few of these recommendations. For example, military hospitals are now collecting from private health insurers when there is duplicate coverage.

The Public Health Service

From 1912 to 1982 the Public Health Service was a growing organization. It gathered under its auspices the National Office of Vital Statistics, the Communicable Disease Center, the National Institute of Mental Health, the Indian Health Services, and various other programs of the Health Services

Corps, to include drug abuse and comprehensive health planning programs. In 1968 the Public Health Service was placed under the control of the Assistant Secretary of Health and Scientific Affairs of the Department of Health, Education and Welfare (now the Department of Health and Human Services). 10 One of the recommendations of the Hoover Commission of 1955 was that the Public Health Service hospitals be closed. The Office of Management and Budget strongly supported this recommendation and led a crusade over two decades to obtain their demise. In 1982 the funding of eight hospitals and eight clinics was deleted for the following year. The Uniformed Public Health Corps was earmarked for reductions in force or for conversion to civil service status. 11 The reduction in Public Health Service hospitals, however, had an unexpected side effect. Many active duty service members, dependents and retirees had been receiving treatment from Public Health Service hospitals and clinics. When these services were reduced, those beneficiaries turned to CHAMPUS to pay for their care. The c.st to the Army for fiscal year '985 for such treatment was over \$5 million. 12

Department of Defense

The Department of Defense (DoD) provides medical care to its active duty personnel, retired personnel and their dependents. This is done through a system of over 150 nospitals operating with an interlinked support system of smaller health and troop clinics. The cost of operating this systems exceeds

S4 billion. ¹³ The DoD continues to operate on a tri-service basis with slightly more cooperation among the three services new than at the time of the Hoover Commission. However, the DoD continues to foster three separate medical systems with different methodologies and regulations, and with consequent overlapping of services and keen competition for medical and financial resources despite criticism from Congress and the Office of Management and Budget.

Actual and perceived parochial overlapping led the Senate Armed Services Committee to initiate a study to consider creation of a "Defense Health Agency" in 1982. This study, concluded on April 22, 1982, recommended that a Defense Health Agency, similar in structure and function to the Defense Logistics Agency and the Defense Intelligence Agency be established. The study recommended combining regional efforts in the United States and full cooperative sharing of services between the Army, Air Force, and Navy. 14 The Navy and Air Force Surgeons General opposed this action while the Army Surgeon General remained neutral. 15 Since that time, the Assistant Secretary of Defense for Health Affairs has undertaken to consolidate functions of the individual service's Medical Departments. One of the biggest problems facing the Assistant Secretary of Defense for Health Affairs is increasing medical costs. Of special interest to the DoD is the CHAMPUS costs. When a line in the federal budget exceeds one billion dollars it draws attention. Since CHAMPUS is "beans and not bullets" it is a particularly noticed area.

B. THE HISTORY OF CHAMPUS

In 1884, the Congress of the United States directed that, "the medical officers of the Army and contract surgeons shall, whenever practical, attend the families of the officers and soldiers free of charge." Through the years medical care to dependents had increased. By the end of World War II, medical care for all of these categories had become institutionalized and was considered an "accepted benefit" for recruiting purposes.

In 1955, the second Hoover Commission was created to study the Federal Government organization which included the military health care system. Among its recommendations were (1) the need to better coordinate its programs. including the placement of executive agents in the regions; (2) specialized facilities, including a Medical Center for each Military Department needed to be created; and (3) management authority was vested in the Secretary of Defense. It also recommended a civilian health insurance plan for military families. The latter came into being as the Dependents Medical Care Act of June 7, 1956 (Public Law 84-569), the precursor of CHAMPUS.

The next step in the evolution of CHAMPUS is best described by Vernon McKenzie, Principal Deputy Assistant Secretary of Defense for Health and Environment, Department of Defense, in testimony before the House of

Representatives Committee on Armed Services hearings held in the fall of 1974:

"Beginning in 1961, large numbers of military personnel who began their military careers during World War II became eligible for retirement by virtue of completing 20 years of active duty military service. In 1962, the impact of the retirement problem on the military health care system became a matter of concern within the Department of Defense. Early in 1963, the Secretary of Defense established a study group to look into the health care aspects of the retired population.

Early in 1964 concern on the part of the House Armed Services Committee about this problem led the chairman to appoint a special sub-committee chaired by the late L. Mendel Rivers to review the matter. The Rivers' subcommittee considered the report made to the Secretary of Defense by the Department of Defense study group in making its own recommendations. Both groups advocated the establishment of a civilian health care program for retired members and their dependents since it was clear that in a matter of a few years the health care needs of the retired military population could no longer be met entirely by military medical facilities. In 1965, the Department of Defense forwarded proposed legislation to the congress recommending, in effect, that retired members and their dependents be added to the CHAMPUS program. Our proposal, with some modifications, was enacted in 1966."

The Military Medical Benefit Amendments of September 30, 1966 (Public Law Number 89-614) liberalized the ten year old program in two ways. First, it included all members or former members of the uniformed services who were "entitled to retired or retainer pay," and their dependents, and all dependents of deceased personnel in the program. Second, it expanded the range of benefits available under the program, especially in the areas of ambulatory care and drugs. The expanded ambulatory care benefits were introduced for dependents of active duty members on October 1, 1966. During committee hearings and passage of the bill it was commonly called "the

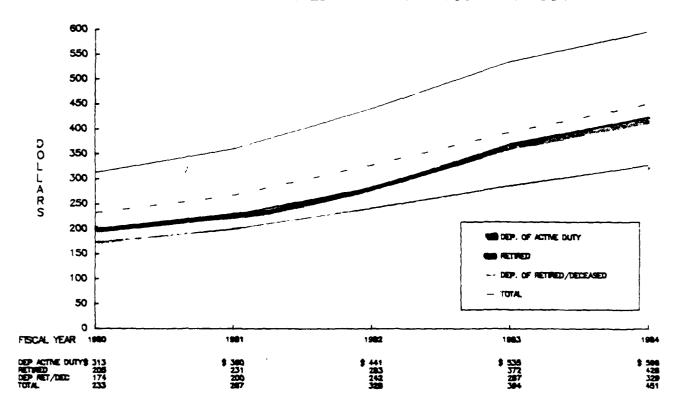
Military Medicare bill. Expanded inpatient benefits, and the inclusion under the program of retirees and their dependents and the dependents of deceased personnel, were effective on January 1, 1967. 17

C. CURRENT EFFECTS AND COSTS

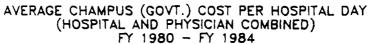
CHAMPUS became, in effect, an "automatic entitlement Program" similar to the Medicare program which is administered by the Department of Health, and Human Services. It was automatic in the fact that those funding and administering the program had no control over who entered the program. To make things more difficult, CHAMPUS paid customary or prevailing fees to health care providers to remain competitive with Medicare and other third party insurance payers. The cumulative impact of these factors was to increase the volume of business under the CHAMPUS program from 650,000 claims and 70 million dollars in expenditures in fiscal year 1966 to more than 1.5 million claims and 160 million dollars of expenditures two years later. 18 Since then the costs of CHAMPUS have continued to escalate. The graph in Figure 1 on the following page indicates the increasing cost per bed day for dependents of active duty, retired military personnel and dependents of retired or deceased personnel. It is generally believed that the increase in costs of retired personnel is reflective of both the numbers and increasing age of retired persons. 19

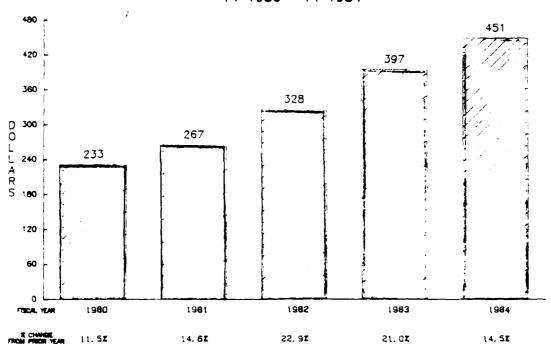
Figure 1

AVERAGE CHAMPUS (GOVT.) COST PER INPATIENT DAY (HOSPITAL & PHYSICIAN) BY BENEFICIARY CATEGORY FOR CARE RECEIVED DURING FY 1980 - FY 1984



The graph in Figure 2 graphically illustrates the rising costs per bed day for all categories of beneficiaries. Particular note should be made that this is after the patient has paid his deductible portion that CHAMPUS does not pay. In addition some diagnostic procedures are not covered under CHAMPUS, the patient carries the full brunt of these charges. Thus the cost listed in Figure 2 and the rest of this study are not true costs but only the portion that the Government has to pay. All CHAMPUS costs addressed in this study will combine hospital and physician costs since the Uniform Chart of Accounts addresses hospital care costs.





The graph in Figure 3 illustrates both the increasing CHAMPUS population and per capita costs. This is a numerical recap of the total information displayed in Table 1. Numerical consideration of the information starkly brings out the fact that we are dealing with increases of hundreds of thousands of patients throughout the whole CHAMPUS system. This coupled with the increased per capita costs makes the increases in costs more focused.

TOTAL AND PER CAPITA HEALTH CARE COST TO CHAMPUS FOR ALL ELIGIBLE BENEFICIARIES

	NUMBER OF CHAMPUS ELIGIBLES	CH AMP US HEALTH CARE BUDGET	PER CAPITA COST
	(IN THOUSANDS)	(\$ IN THOUSANDS)	
FY 1981	6,324	\$ 804,251	\$ 127
FY 1982	6,520	\$ 1,035,500	\$ 159
FY 1983*	6,827	\$ 1,115,372	\$ 163
FY 19 84*	6,924	\$ 1,184,113	\$ 171

FIGURE 3

THE ESTIMATED NUMBER OF CHAMPUS ELIGIBLES MY BE SUBJECT TO CHANGE DUE TO REVISIONS IN THE ESTIMATED NUMBER OF RETIREES AND THEIR DEPENDENTS.

The graph in Figure 4 illustrates the only bright spot on the CHAMPUS horizon, that of declining length of patient stay. This is due to two factors: better utilization review by CHAMPUS agencies and wider recognition of utilization review programs in the private sector. Length of patient stay also decreased nationally during this period.

AVERAGE LENGTH OF STAY (DAYS) BY CATEGORY OF BENEFICIARY FOR FY 1980 - FY 1984 (EXCLUDING PHYSCHIATRIC)

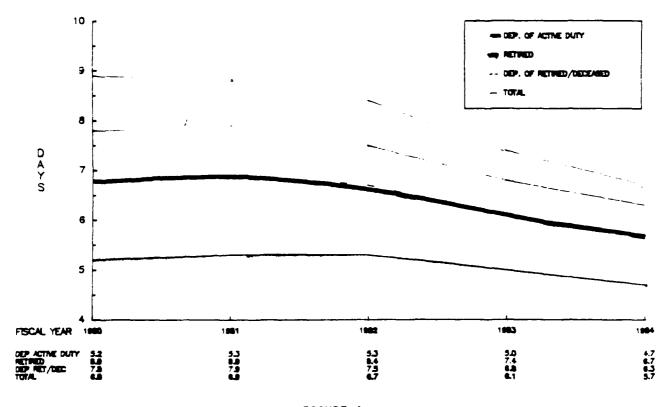


FIGURE 4

In Fiscal Year 1983 the Surgeons General began a concerted effort to assist in containing CHAMPUS costs by recapturing workload in fixed military medical facilities where staffing allowed. This has been somewhat successful in slowing the rate of increase in CHAMPUS costs in that fewer statements of non-availability were given out in the military medical facilities catchment areas. Phowever, these statements of non-availability only applied to the 40 mile geographical catchment area surrounding military medical care facilities. Outside of these catchment areas, CHAMPUS costs continue to grow because of the increasing number of retired military personnel under 65. At age 65 retired military personnel and their dependents have to use MEDICARE or use a military medical facility. The bulk of the retired population under 65 is also aging which generally indicates a greater number of medical problems per individual thus, a greater cost to the CHAMPUS program.

This study will explore another option which can reduce costs, i.e.,by shifting inpatient care delivered by the private sector and paid for by the CHAMPUS program to inpatient care delivered at military medical facilities. The primary intent of this study is to determine (and demonstrate) if the transfer of such services will result in direct cost savings to the Department of Defense.

CURRENT CHANGES AND PROPOSED PROGRAMS

After several years of staying within projected budgets CHAMPUS has suffered a sudden setback. As indicated in the July 1986 issue of U.S. Medicine:

"Massive cost overruns have hit CHAMPUS this year, leaving the Defense Department nearly half a billion dollars short of funds for the civilian health care program.

Claims received from CHAMPUS beneficiaries are up nearly 20 percent over the comparable period last year. John Dexter, deputy Assistant Secretary of Defense for Medical Resources Administration, told U.S. Medicine.

In mid-June officials in the DoD Health Affairs Office sent to Congress a request to reprogram \$260 million to cover the CHAMPUS deficit but realized almost immediately that even that amount would not be enough, Dexter said.

Consequently, late last month another reprogramming request was being prepared. Dexter estimated it would seek another \$200 to \$250 million, bringing the total amount needed to cover the CHAMPUS deficit to about \$500 million or \$.5 billion."²²

Reasons given for the over runs were (1) Gramm-Rudman cutbacks which amounted to a 5% cut in the healthcare budget; (2) increased concern for quality assurance which resulted in cutting back in the workload of an overworked staff; and (3) inflationary factors in healthcare.

One of the "fixes" implemented was Primary Care (PRIMUS) clinics ran by

civilian contractors. Initially these clinics were started in the Washington, D.C. area, now more are being planned in areas of high need. These primary care clinics increase patient satisfaction due to faster outpatient services, however they do not decrease costs in the area of inpatient services where the greatest of CHAMPUS' cost increases have been occurring. In fact, the is some indication that PRIMUS clinic costs have skyrocketed due to eligible persons now using the PRIMUS clinic services rather than civilian facilities paid for by private insurance.²³

Another of the solutions in the planning for CHAMPUS is the Improve Medical Programs and Readiness Immediately, Not Tomorrow (IMPRINT) Program. 24 Both the House and Senate Armed Forces Committees have voiced doubt over the IMPRINT program in terms of its ability to save money and provide satisfactory service to beneficiaries. The Senate Armed Services Committee wants to stipulate that any change in program will provide either the same care at less cost to the government or better care at no additional cost. 25

Now nearly a year behind schedule, the Department of Defense is asking for bids on a scaled-down version of IMPRINT. The plan which officials hoped to have in place nation wide this year is being tested in three pairs of states - Florida and Georgia, North and South Carolina, and California and Hawaii. Bids for this test are due by the end of May and the three contracts awarded in the fall of 1987 would take effect in the spring of 1988.

Contracts would run for one year but could be renewed for two more years at the government's option. Originally, the Department of Defense had intended to divide the country into thirds and ask for fixed price bids to cover the approximate \$1.8 billion in health care received by six million military dependents and retirees covered under CHAMPUS. Beneficiaries could have retained their current CHAMPUS coverage or signed up in a new CHAMPUS Prime program that offered free or low-cost primary care but required beneficiaries to use the contractors' network of preferred providers for much of their care.

Military hospitals would have continued to deliver much of the retirees' and dependents' care but the contractors were to develop a "gateway" to shunt more of the complex surgical cases into the military facility while sending more primary care to civilian physicians and hospitals. The contractor also was to supply civilian physicians, nurses, and other staff to military facilities in some cases. After concerns were raised by potential bidders and beneficiaries, Congress required a demonstration that was not to include more than a third of all CHAMPUS beneficiaries. The six states that are included in the demonstration do have about a third of all retirees and dependents. They also were selected because they have some of the most crowded military medical facilities in the country. One of the major complaints about the original CHAMPUS reform plan was the degree of risk required of the potential bidders. Defense officials now have made additional data on military facilities and CHAMPUS available to help bidders evaluate the risk. More

important, risk in the demonstration plan has been scaled back. This is in cart because the contracts cover smaller areas and each are worth about \$200 million rather than the three \$600 million contracts originally envisioned. In addition, the risk provisions have been rewritten in the demonstration. Under the original plan, the government could have required contractors to continue in their contracts for three years, with price adjustments only if the contractor workload went up because military facilities treated fewer dependents and retirees than they now do. Many CHAMPUS eligibles now use other benefits or avoid care rather than incur the CHAMPUS co-payments, however, and contractors feared they could suffer severe three - year losses if these "ghosts" were lured back into CHAMPUS by the promise of free pri ary care benefits. Under the demonstration contractors still would have absorp any losses suffered because of unanticipated utilization increases in the But if the government exercised its option to continue the contract after that time, the price would be renegotiated to account for utilization increases.

The "gateway" requirements in the original plan also have been revised to give contractor more flexibility in setting up a system, and the concept has been renamed the "health care finder". The new bid request also makes clear that bidders will have "substantial latitude to propose delivery management techniques they believe will facilitate control of the financial underwriting risk" 23 25 26

As this recent literature review indicates, there is an increasing concern at all levels of government about the cost of providing health care under the current CHAMPUS program which was designed originally to pay for outpatient care and not inpatient care. The original IMPRINT proposals were strong in their intent to direct high cost inpatient care to military medical facilities. This would have directly in line with the intent of this paper. Under the new test programs in the three areas it will be a year before the impact of the new proposals can be evaluated.

Health care planners have found that they do not have control over their constituent populations or the cost of medical care charged to them. The subject of this paper addresses one factor that can be controlled. That is, the additional utilization of currently available inpatient treatment resources at one medical center in the DoD, i.e, Fitzsimons Army Medical Center. If certain intended provisions of the IMPRINT program come to fruition and the "health care finder" portion of the program actually directs patients to military medical facilities for certain inpatient care, money can be saved. This research will poignantly demonstrate the amount of money that could be saved by Fitzsimons Army Medical Center if such utilization were initiated.

II. DISCUSSION

A. STATEMENT OF RESEARCH QUESTION

The question which will be addressed is: what is the inpatient cost differentials per bed day between Fitzsimons Army Medical Center and the average of those paid by CHAMPUS in DoD Region III. As a corollary, what are the most available and financially attractive services to which additional resources should be given, in order to save the most money. This has not previously considered for inpatient care in a military medical facility.

B. OBJECTIVES, CRITERIA, ASSUMPTIONS, AND LIMITATIONS

OBJECTIVES

Objective One: Determine in which medical specialities Fitzsimons Army Medical Center (FAMC) can provide direct inpatient medical care at less cost than that provided by the civilian sector. This has not been done before because of (1) a lack of trust in the military Uniform Chart of Accounts (UCA) financial data and (2) attempts to determine equivalent medical specialities costs which correspond with the Uniform Chart of Accounts categories and CHAMPUS output had not previously been successful. This study has attempted to correlate the costs between these two organizations wherever possible.

Attempted Conversion Diagram

UCA Database CHAMPUS Database ICDM - 9 + (CM) +- ICDA - 8 coding

= Average
 equivalency

CHAMPUS has already spent over \$750,000 trying to determine a direct conversion between the UCA and CHAMPUS data bases. This was unsuccessful due to differences in terminology that could not be transposed.²⁷ It was a matter of human judgment beyond the capabilities of computers. For the purposes of

the FAMC Closure Study and this study, members of the FAMC professional staff have been asked to utilize their clinical judgment in comparing specific procedures within their medical speciality in order to most accurately determine equivalency between UCA and CHAMPUS methods of calculating costs.

Objective Two: This study will determine the amount of cost savings (or loss) by each medical speciality. These results will then be presented in a descending array to allow rapid assimilation of cost differentials.

Objective Three: This study will determine if the capability exists to expand the services of the medical speciality in order to meet the demand created by a redirection of in CHAMPUS service. It will also determine if there is a need for expansion.

Objective Four: Of those expandable services, it will determine those which are in such demand by the beneficiary population that increased inpatient availability at FAMC would not require amendment of the CHAMPUS "forty mile" requirement.

CRITERIA

CRITERION ONE: Who can provide similar care at a lower overall cost to DoD, FAMC or CHAMPUS?

CRITERION TWO: Does FAMC have the capability to support additional patient workload if additional variable resources (i.e., personnel, and funds) are provided?

ASSUMPTIONS

ASSUMPTION ONE: There is an unmet demand for medical care in specialities at FAMC whose use, as opposed to sending patients to the civilian sector via CHAMPUS, would produce high cost savings.

ASSUMPTION TWO: Fitzsimons Army Medical Center can obtain resources in terms of money and manpower to expand its inpatient treatment capability to meet that demand.

ASSUMPTION THREE: That "health care finder" systems under the IMPRINT program will not prevent the transfer of patients in the civilian sector to FAMC inpatient services with the most cost savings.

ASSUMPTION FOUR: FAMC costs per bed day will remain relatively stable in relationship to the same costs per bed day by medical specialty in the civilian sector.

LIMITATIONS

LIMITATION ONE: This study will be limited to FAMC and its referral area in DoD Region III.

LIMITATION TWO: As Uniform Chart of Accounts data and CHAMPUS data are not based on similar or uniform cost assignment methodologies, the output costs for this study may not be totally verifiable or accurate.

LIMITATION THREE: The need for additional space will be a final limiting factor in this study since construction authorizations will take five years or longer to realize.

LIMITATION FOUR: Truly emergent cases can not be required or expected to get inpatient care only at FAMC. The rapidity of onset of illness or injury will preclude any type of referral base or voluntary travel by the patient.

C. METHODOLOGIES

BACKGROUND

In FY 1984 FAMC provided 147,308 bed days of care. Approximately 42 per cent of the inpatient workload was provided to the beneficiaries residing with the FAMC catchment area (Denver metropolitan area). Approximately 13 per cent of the workload was to the beneficiaries residing in the Fort Carson catchment area with the remaining 45 per cent provided to beneficiaries residing in DoD Region III outside the Denver and Colorado Springs areas. This led to the decision to use DoD Region III costs, since this would best represent additional workload to be captured. Fitzsimons normally draws its referrals from this region and is familiar with the military medical facilities in it. Specialists from Fitzsimons routinely make consultant visits throughout the region on an annual basis. The Air Force Aero-Medical Evacuation system routinely picks up and delivers patients to and from Fitzsimons for DoD Region III. The area encompassed by DoD Region III is illustrated on the following page.

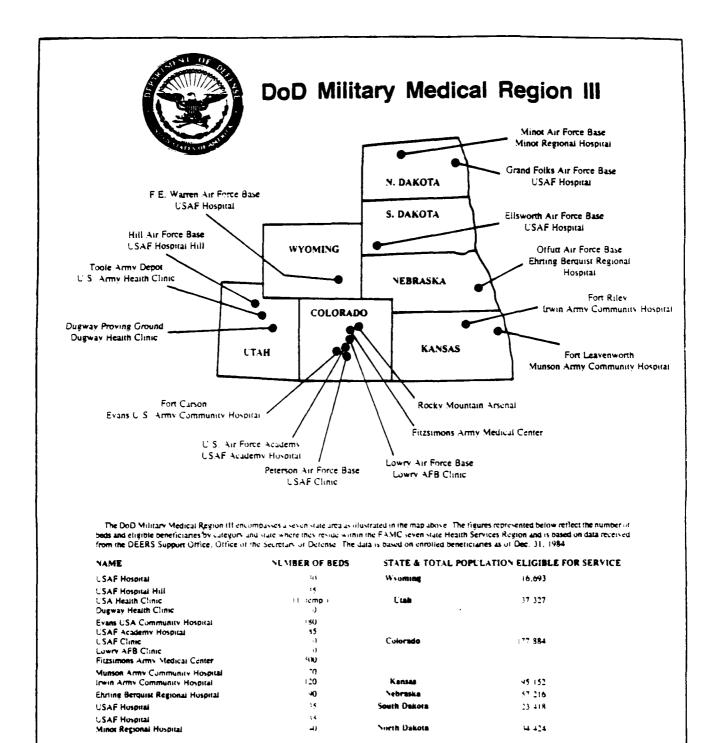


FIGURE 5

Illustration from The Stethoscope, Vol. 43, no.16, Fitzsimons Army Medical Center, Aurora, Colo 80045, August 14, 1986.

METHODOLOGY USED TO ESTABLISH EQUIVALENCY BETWEEN UCA AND CHAMPUS COSTS

The methodology used to equate Uniform Chart of Accounts (UCA) and CHAMPUS financial data was derived from the "Estimated Cost and Workload Impact on CHAMPUS Due To The Potential Closure of Fitzsimons Army Medical Center" study. The expected cost impact on CHAMPUS, in FY 1984 dollars, was also determined at the beneficiary and clinical speciality level, whenever possible by applying the detailed average (government) expenditure from the Don Medical Region III CHAMPUS reports. Three special reports were developed to display this data: (1) emergency versus non-emergency care, (2) Special reports of surgical and non-surgical care, (3) special reports detailing all patient information including the ICDA-8 codes to determine the exact diagnoses. Examples of these comparisons are at Appendices A through C.

RESEARCH METHODOLOGY PROCEDURE

The first action was to dismiss the emergency medical care delivered under CHAMPUS. Because of the emergent nature of the care, there was no reasonable expectation that the workload indicated there could be captured by any military facility, much less FAMC, that might be 1000 miles away from the scene of an accident or dangerous medical sequelae. Thus the purged data base considered only "routine" inpatient medical care, theoretically those who could be transported via the aeromedical evacuation system or by other means

to Fitzsimons. In general the costs were lower for non-emergency medical care so this constituted the initial adjustment in costs that affected the clinical specialities. A summary of the information is shown in Table 5 which indicates the difference in CHAMPUS costs between emergency and non-emergency inpatient care per bed day and the number of beds which are utilized. The figures are calculated for patients other than dependents of active duty personnel, i.e., primarily retirees and was used for establishing the baseline decision not to include emergency care in the study. The other charts are not shown since the data was included in the output costs for other categories during the database manipulation without printing out the data sheets.

DIFFERENCES IN COST PER BED DAY
EMERGENCY VS. NON-EMERGENCY CARE DELIVERED BY CHAMPUS
FOR DEPENDENTS OF OTHER THAN ACTIVE DUTY

CLINICAL SPECIALTY	EMERGENCY		NON-EMERGENCY	
	AVG COST	DAYS	AVG COST	DAYS
Allergy	1061	14	1486	1
Cardiology	956	63	677	161
Dermatology	none		680	35
Endocrinology	334	10	278	144
Gastroenterology	654	70	370	725
Hematology	none		628	198
Infectious Disease	none		860	42
Nephrology	none		364	84
Neurology	1046	48	471	489
Nutritional	none		none	
Pulmonary/Resp.	739	83	377	293
Rheumatology	1870	1	389	502
Other	964	22	944	196
Dental	none		1256	24
Obstetrics	733	9	3735	4

Gynecology Ophthalmology	831 547	4 1 6	319 887	1164 179
Psychiatry	none		none	
Special Peds	none		257	30
ENT	3388	1	558	461
Neurosurgery	859	214	300	925
Orthopedics	494	624	470	1449
Thoracic Surgery	449	91	288	303
Urology	446	53	434	857
AVERAGE TOTAL	\$700	2485	\$449	12897

As indicated by the average total cost, non-emergency patient care was lower. This, coupled with the impossibility of trying to capture emergency care led to the decision to discard emergency care data in calculating final costs.

The next step was to equate medical procedures performed by the private sector to those performed by the profession staff at Fitzsimons Army Medical Center. This is a complex issue since the private sector may bill CHAMPUS for several different procedures under the same diagnosis code. The first step was to divide the data base into surgical and non-surgical procedures. The indicators in some cases are very obvious, e.g. some of the medical specialties do not perform surgical procedures. In other cases it was much more complex because traditional non-surgical medical specialties have moved into the arena of performing what are listed as surgical procedures. This researcher met with the Service Chiefs of medical specialities at FAMC to determine which surgical/non-surgical care was considered a normal part of their specialty practice. An example of this is at Appendix B. If the

relative mix appeared normal to the Chief of the Medical Service the total overall average costs for surgical and non-surgical procedures were accepted as adequate. This task required a great deal of time to complete and raised the question in several areas as to the definition of the surgical/non-surgical procedures within some medical specialties. This then required returning to the data base in order to develop a list of the types of cases included within the medical specialty report. The lists (see Appendix) were then identified according to the ICD code, sorted by hand and then taken back to the Service Chiefs for additional review. In the majority of cases only minor adjustments were made as to the case mix per specialty noted in the CHAMPUS data base. In one case, Thoracic Surgery, all heart problems and surgical repair came under the code of "cardiac failure." The only way to identify if the person had bypass surgery was to determine if there had been operating room costs. Even then there was no direct delineation of costs between the Cardiology and Thoracic Surgery services. A study of the codes in the data base showed that most of the CHAMPUS data base cost information was attributable to lung surgery and not cardiac surgery. In this situation the final costs were determined by evaluating the cost of fifty actual cases that FAMC Thoracic Surgeons had referred to the civilian sector for care, and averaging the total CHAMPUS costs for these cases. This required entering each patient's name and social security number into the CHAMPUS data base and then securing the required information. Since many of the patients that were sent out from FAMC had other primary insurance carriers in addition to

CHAMPUS, this was one of the more questionable cost analyses and must be considered a conservative estimate of actual cost. Cardiology costs were determined by obtaining an average of those diagnoses that did not include an operation code indicating that a surgical procedure had performed, i.e., if a diagnosis included an operation code, the cost was considered to be within the realm of thoracic surgery as opposed to Cardiology. Other areas such as Podiatry and Orthopedic Surgery were not listed separately in the CHAMPOS database. Therefore, an estimation for each had to be made based on each Orthopedic procedure costs. The following chart (Figure 6) indicates the final results of the study.

THE ESTIMATED CHAMPUS COST PER INPATIENT DAY* BY HOSPITAL SPECIALTY

ALL CATEGORIES OF BENEFICIARIES

FAMC HOSPITAL PERAPTHENT	NON-SURG.	SURG.		OTHER	AVG. CHAMPUS
HOSPITAL DEPARTMENT	<u>ONL Y</u>	ONLY	NON SURG.	(SEE REF)	COST/DAY \$ 434
Allergy/Immunology Cardiology			٧	1	\$ 434 773
Dermatology			X X		555
Endocrinology	χ		^		363
Gastroenterology	^		Y		441
Hematology			X X		511
Infectious Disease	X		A		614
Internal Medicine				2	423
Nephrology			Χ	•	537
Neurology	Χ		^		438
Oncology	,			3	511
Pulmonary/Respiratory			X	J	547
Rheumatology			X X		487
Cardiovascular/Thoracic	Surq.			4	1,100
Neurosurgery	J	χ			550
Oral Surgery				ن	1,315
Plastic Surgery				6	908
General Surgery		X			561
Urology			χ		523
Gynecology			Χ		464
Obstetrics			χ		881
Adolescent Pediatrics				7	550
Nursery				8	875
Pediatrics				9	650
Family Practice-Gynecole			χ		464
Family Practice-Orthope	dics		X X		499
Orthopedics			X		499
Podiatry				10	499
Psychiatric/Psychology	Χ				242
Ophthalmology			X		859
Otorhinolaryngology			χ		750

^{*}Costs are based on FY 1984 CHAMPUS government expenditures per day for total inpatient care (hospital and professional services combined). Costs are based on DoD Medical Region III care for the appropriate specialties (unless otherwise specified) as indicated in the methodology section.

FIGURE 6

NOTES TO TABLE 6

DESCRIPTION OF "OTHER" METHODOLOGY USED TO CALCULATE INPATIENT COST PER DAY

- 1 Allergy/Immunology: Weighted average of non-surgical care only for allergy.
- 2 Internal Medicine: Internal Medicine (other) non-surgical care only.
- 3 Oncology: Same as hematology weighted average of surgical/non-surgical care.
- 4 Cardiovascular/Thoracic Surgery: Calculated using special diagnosis and procedure codes for this type of surgery.
- 5 Oral Surgery: Used CHAMPUS dental surgical care only.
- 6 Plastic Surgery: Calculated using special diagnosis and procedure codes for selected types of plastic surgery.
- 7 Adolescent Pediatrics: Weighted average of medical and surgical care for patients age 1 19 from the FY 1984 Cost & Workload report.
- 8 Nursery: Weighted average of medical and surgical care for patients less than age 1 from FY 1984 Cost & Workload report.
- 9 Pediatrics: Weighted average of medical and surgical care for patients age 1 19 from the FY 1984 Cost & Workload report.
- 10 Podiatry: Same as orthopedics weighted average of surgical/non-surgical care per specific case type.

The foregoing data was the basis of the information that went into the FAMC Closure Study. Compilation of the data required approximately 360 manhours and \$25,000 worth of computer time to develop.26. The obvious problem, as previously mentioned, is that the CHAMPUS data base was set up to capture costs that were submitted by the civilian sector in their billing procedures which differs from the Department of Defense method of computing costs. The methods employed have established a commons data base which can be used to compare costs as accurately as possible.

The next step was to obtain the FY 1984 Uniform Chart of Accounts from the Directorate of Resources Management at Fitzsimons Army Medical Center. As shown on the table on the next page, Internal Medicine subspecialties are listed first. Surgical subspecialties constitute the second half, with miscellaneous areas completing the table. Later constructs will match these CHAMPUS and UCA medical subspecialties by cost differentials. Some areas will "fall out" such as nursery because CHAMPUS has no specific charge for that area. Because Obstetrics will not be an area proposed for increase, excluding the nursery will have little or no effect. The final UCA costs were:

UNIFORM CHART OF ACCOUNTS COSTS BY MEDICAL SPECIALTY FY 1984 DIRECT PATIENT CARE INPATIENT SERVICES IN COST PER BED DAY (EXTRACTED)

	MEDICAL SPECIALTY	COST PER BEI	DAY	
	Internal Medicine Cardiology Coronary Care Dermatology Endocrinology	\$ 542 272 600 208 1	9	3
	Gastroenterology Hematology Intensive Care (Medical) Nephrology Neurology Oncology Pulmonary/Upper Respiratory Di Rheumatology General Surgery Cardiovascular and Thoracic Surgery Intensive Care (Surgical) Neurosurgery Ophthalmology Oral Surgery Otorhinolaryngology Pediatric Surgery Plastic Surgery Plastic Surgery Proctology Urology Gynecology Obstetrics Pediatrics Nursery Neonatal ICU Orthopedics Podiatry	209 201 852 210 238 197 202 207 298 369 816 337 268 554 267 0 203 0 286 304 284 303 342 474 186 782		
AVG	TOTAL	281		

FIGURE 7

The data was surveyed to determine that enough of the medical specialties and their cost differentials matched to constitute a cost array. Initial drafts of the information revealed startling differentials that deserved full investigation. Rather than dealing with average cost per bed day for all medical care, it became evident that more useful information would be available by comparison of individual medical specialties. The comparison of this information is contained in the following section: Conclusions and Recommendations.

III. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

After final adjustments in CHAMPUS costs, a descending cost array was designed. This was accomplished by subtracting the FAMC UCA costs (which were generally smaller) from the CHAMPUS costs. Both costs were based on costs per bed day, for inpatient care. The descending array was set up to indicate the highest cost savings to the government at the top with actual losses at the bottom. The wide variation in costs, per specialty, paralleled those found in the civilian sector. There were certain specialties in which civilian care was actually less expensive than that provided by the government. The extreme variation in costs were startling. The next objective of this study was then undertaken. This was to determine which specialties could increase patient load if the support staff were made available, in particular, to those specialities in which greater cost savings could be realized. A common complaint heard in all surgical specialties is that there isn't enough operating room (OR) time and enough beds to support the demand for surgery. This study will demonstrate that with additional support personnel, FAMC could provide the needed bed space and OR time requested.

The table in Figure 8 on the following page describes by specialty the cost differentials between CHAMPUS and FAMC.

COST SAVINGS OR LOSS PER BED DAY CHAMPUS COSTS COMPARED TO UCA COSTS 1984 IN DESCENDING ORDER OF COST SAVINGS PER BED DAY

MEDICAL SPECIALITY	CHAMPUS COST ALL BENEFICIARIES	FAMC UCA Costs	SAVINGS TO GOVERNMENT
Oral Surgery	1315	553	762
Cardio-Thoracic Surgery	1100	369	731 *1
Plastic Surgery	908	202	706
Obstetrics	881	284	597
Ophthalmology	859	267	592
Otorhinolaryngology	780	236	544
Nursery (NICU)	875	341	534
Adolescent Pediatrics	650	303	347
Pulmonary/Respiratory	547	201	346
Nephrology	537	210	327
Oncology	511	196	315
Orthopedics	499	185	314
Hematology	511	201	310
Dermatology	555	208	283
General Surgery	561	298	263
Urology /	523	285	238
Gastroenterology	441	209	232
Neurosurgery	550	336	214
Neurology	438	237	201
Rheumatology	407	207	200
Endocrinology	363	193	170
Gynecology	464	304	160
Infectious Disease	614	542 *2	72
Psychiatry/Psychology	242	215	- 73
Allergy/Immunology	434	542 *2	-108
Internal Medicine	423	542 *2	-119

FIGURE 8

^{*1} Special Note. Due to complexities of extracting data cardiac care was not calculated. In a review of Cardio-Thoracic data it appeared that the costs would be approximately the same, i.e., a cost saving of approximately \$800 a day would be possible.

day would be possible.

**2 Because of cost pooling in the Department of Medicine the costs of Infectious Disease, Allergy/Immunology and Internal Medicine are the same. This is believed to be reasonably accurate.

This descending array indicates the areas that have the greatest cost savings for the government at the top. In the negative areas, it indicates those where the government loses money, although these may be needed to support functions in conjunction with those areas that generate a positive cost savings.

BED OCCUPANCY

The normal standard for hospital occupancy is to have 85% of the total hospital beds occupied by patients. Some hospitals operate at a higher percentage. Generally, the higher the percentage of occupancy, the more efficient the hospital is considered. For the purpose of this study the 85% rate is used. 28/29 The following chart, constructed with data from the American Hospital Association, indicates the average bed occupancy rate by size of hospital in 1983. 30

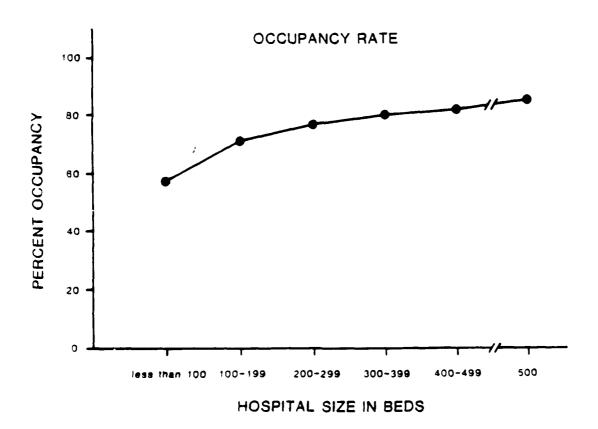


FIGURE 9

The year used for the Fitzsimons occupancy rate calculations was calendar year 1985, the year immediately following the financial analysis on the preceding pages. During the calendar year, FAMC had to "cap" or put artificial restrictions on the number of beds that could be occupied due to shortages of nursing personnel at various times during the year. There was some impact due to construction, but this had little effect on available beds because the loss due to construction could have been compensated for with adequate staffing.

The average number of "physical" beds available to Fitzsimons Army Medical Center during calendar year 1985 was 502. However, due to support staffing shortages, the hospital was only able to fill an average of 370 beds per day. Calculated out, this represents a 74% occupancy rate, 11% below what is considered optimal. This means the hospital should have been able to fill 57 more beds per day but couldn't primarily due to staffing constraints. The chart on the following page graphically indicates the occupancy rate differences.

BED OCCUPANCY RATE AT FITZSIMONS ARMY MEDICAL CENTER ILLUSTRATING AN AVERAGE 57 BED UNDERUTILIZATION PER DAY

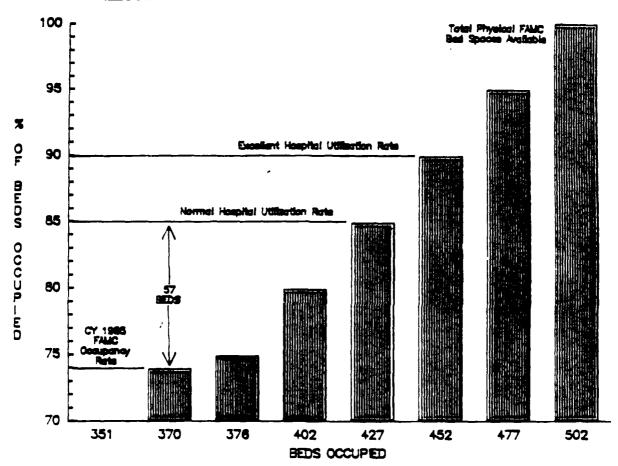


FIGURE 10

B. APPLICATION OF INFORMATION

The descending cost array was carried over into a cost analysis model. The next step was to contact the Service Chief of each specialty and determine if he could increase his average patient bed days with his current professional staff. The variable given to them was that they would receive additional funding and support staff in terms of nursing and administrative support. No increases in physical plant were in the projection. Additional funding included expendable medical supplies and minor equipment (Capital Expense Equipment under \$5000). Both additional funding and staffing are expected to be covered by the UCA cost per bed day. Only one medical subspecialty, Thoracic Surgery indicated they would need another physician on their staff since they were nearing maximum capability. The majority of the surgical services indicated that the main restriction on their provision of additional surgical services was operating room time availability. This was determined to be a problem of adequate staffing, i.e., given enough personnel the operating rooms could function for longer periods of time and allow more surgery to be performed. If this restriction were to be overcome additional nursing staff would be needed on the wards to care for the increased number of post-surgical patients. The following chart indicates the estimate of possible cost savings.

DEMONSTRATION MODEL OF COST SAVINGS PER DAY POSSIBLE BASED ON FILLING 57 UNOCCUPIED BEDS PER DAY

MEDICAL SPECIALTY	NUMBER OF ADD'TL PATIENTS PER DAY POSSIBLE	SAVINGS PER BED DAY	EXTENDED COST SAVINGS	NOTES
Oral Surgery	0	762	0	1
Cardio-Thoracic Surgery	4	731	2924	2
Plastic Surgery	0	706	0	2
Obstetrics	0	597	0	4
Ophthalmology	10	592	5920	
Otorhinolaryngology	9	544	4896	
Nursery (NICU)	9 6 5	534	3204	5
Adolescent Peds		347	1735	
Pulmonary/Respiratory	0 6 5	346	0	4
Nephrology	6	327	1962	
Oncology	5	315	1575	
Orthopedics	5	314	1570	
Hematology	0	310	0	6
Dermatology	0	283	0	
General Surgery ;	10 (-3)	263	1841	7
	57 occupied	bed days =	\$ 25,637 per	day
	annual sa	avings =	\$9,357,505	

	amic	iai saviliys	- \$3,337,30	,
Urology	10	238	2380	
Gastroenterology	5	232	1160	
Neurosurgery	0	214	0	4
Neurology	0	201	0	6
Rheumatology	0	200	0	6
Endocrinology	0	170	0	6
Gynecology	6	160	960	
Infectious Disease Others	unk	72	unk	8 9

NOTES:

Oral Surgery was not considered for this study because in 1984 there were only 13 bed days of care paid for by CHAMPUS in DoD Region III and all of those were emergencies. It would not be feasible to transport these emergencies (probably vehicular accidents) to Denver for care.

- 2. One additional Cardio-Thoracic Surgeon needed.
- 3. Plastic Surgery was not considered for this study because in 1984 there were only 28 days of care paid for by CHAMPUS in DoD Region III and all of those were emergencies. Plastic Surgery at Fitzsimons Army Medical Center essentially takes care of all reconstructive care required in DoD Region III.
- 4. Not considered for this study because the majority of the care is emergent in nature and could not be transported to Denver from throughout DoD Region III.
- 5. A means of transport has been proposed for neonates. If accepted this would allow more neonates to be treated.
- 6. The chiefs of these services, in general, indicated that it would be counterproductive to attempt to treat their patients at Fitzsimons. It would be more cost effective to treat them in their local communities. There was also some doubt that enough referrals could be solicited.
- 7. The 3 patients (average bed days) subtracted were to bring the number of patients to 57.
- 8. The Infectious Disease Service recently began treating AIDS patients. This has affected the costs of this service. No current estimates can be made.
- 9. No cost modeling was done on services that "lost" money. No consideration is given to reducing these services because they are essential to hospital function. It is an accepted fact in most hospitals that Internal Medicine is not a "big money maker." However they are essential because they are one of the primary consulting and referral services in any hospital.

C. SUMMARY

A projected savings of over 9 million dollars a year, by one Army Medical Center, is certainly a concept that deserves additional strategic planning. With the fourth stage of epidemic logic transition, the age of delayed diseases coming into effect, the demand for medical care will continue to grow. 31 Despite fewer hospital admissions, Medicare cost containment efforts and a low inflation rate this years national nealth care expenditures are expected to rise 10% to \$511.9 billion dollars. 32 The Department of Defense health care system will have to pay these same increases. The result will probably be less health care delivered to retirees and their dependents unless strategic planning, budgeting and marketing are done by the military medical facilities. Past staffing policies which base the number of personnel on average workload have not taken into consideration systemic limitations in the military A prime example of this is operating room staffing vs. ward inspital. staffing. If there are not enough ward nurses to take care of "thru put" from the operating room, the operating room staff is limited. If the Operating room staff is not large enough there are not enough surgical patients generated to warrant increasing the "average" staffing of the wards. Our system has become trapped in a "which came first syndrome" of staffing that has resulted in a lack of optimal staffing and funding to save the Department of Defense money.

A projected example of this is the Ophthalmology Service which can

provide surgical care for an additional 10 patients a day if support staff were provided. To do this they will require two more operating room nurses, one more nurse anesthestist, four ward nurses and four ancillary personnel. Total annual personnel costs would increase about \$300,000. Supply costs are estimated at \$100 per bed day, which includes surgical supplies, such as intraocular lenses, and ward supplies. In annualized costs this comes to \$365,000. No additional surgical lasers or other equipment are needed. The total increased annual costs of \$665,000 are more than covered by UCA costs of \$974,550 (10 x \$267 x 365). The annual CHAMPUS costs for this care would be a staggering \$3,135,350 (10 x \$859 x 365). The cost savings to the government could be \$2,160,800 annually. Because the hospital is under utilized no increases in fixed facilities would be necessary.

Some of the implications of the Department of Defense planned IMPRINT program will make strategic decisions such as are proposed in this paper easier. Some limitations such as a nationwide shortage of nurses³³ may make it more difficult. Any proposal to shift patient workload to or from military medical facilities should include a cost analysis. Criticisms of the Uniform Chart of Accounts should be based on a strategic outlook rather than microscopic accounting techniques. Goal setting should be based on adequate resources to provide the best quality patient care possible (which the military system does), not just budget limitations. Only by such strategic overviews can we continue to provide the best medical care in the world and save money at the same time.

D. RECOMMENDATION

That Fitzsimons Army Medical Center eventually be resourced to provide care at the 85% occupancy level. The fixed costs such as facilities, utilities and equipment will essentially remain constant. This can be approached incrementally by having increases of patients in specific specialties and capturing exact cost information. Three of the highest cost savings (to the government) specialties that would be best to initiate such actions would be:

MEDICAL SPECIALTY	ADD'TL PATIENTS PER DAY POSSIBLE	SAVINGS PER BED DAY	PROJECTED ANNUAL COST SAVINGS
Ophthalmology	10	\$592	\$2,160,800
Otorhinolaryngology	9	\$544	\$1,787,040
Cardio-Thoracic Surgery	4	\$731	\$1,067,260

By initiating cost savings studies in these three specialties and specifically re-capturing CHAMPUS workload related to them it can be verified that the government can save a significant amount of money. If studies in these three areas prove productive a full implementation of a program to maintain the hospital at a selected 85% occupancy rate could be undertaken. In this manner it could be determined if the \$9,357,505 savings projected on page 47 are feasible.

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APPENDIX A

EMERGENCY VS. NON-EMERGENCY CARE

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APPENDIX B

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APPENDIX C
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ern THIS INFOPMATION IS FRIEGE BY THE PRIVACY ACT OF 1974 (FL. 93-579) and accordance accordance and accordance accordance

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